



Dr. Paul A. Lessing

Extensive experience in developing ceramics and other materials for high-temperature uses, in solid oxide fuel cell development and in creating new materials to solve energy-related problems.

Phone: 208.526.8776

E-mail: paul.lessing@inl.gov

Education: Dr. Paul A. Lessing received his bachelor's degree in ceramic engineering in 1971 and his Ph.D. in materials science and engineering in 1975, both from the University of Utah.

Work experience: Dr. Lessing has worked at Los Alamos National Lab (Space Nuclear Systems), MERDI in Butte Montana (Fuel Cells & MHD materials), Ceramtec (structural ceramics, fuel cells and high-temperature batteries), New Mexico Tech (associate professor, research on ceramics and fuel cells), INL (materials for energy conversion systems, high-temperature reactor materials, spent fuel, solid oxide fuel cells, high temperature hydrogen generation from steam electrolysis, and hydrogen membranes).

Professional endeavors: Dr. Lessing initiated the first research program on planar solid oxide fuel cells while at Ceramtec in 1984 (this area is now subject of research and development throughout the world), has been granted eight patents at INL resulting in the INL Lifetime Achievement Award in Inventorship. He was recipient of the Most Original Technical Work of 2002 Award from Bechtel National. He also invented the DUAGG and DUCRETE (depleted uranium aggregate and concrete, respectively -- both Trademarked by INL) technologies that were licensed. He likes to invent new material configurations and fabrication techniques that can be applied to solve energy related problems in the United States. Dr. Lessing gains satisfaction from getting a new idea and then working with his colleagues to bring it to fruition. He also enjoys working with young people, teaching them and helping them to grow and become professional scientists and engineers. In the future, he would like to contribute to the success of the New Generation Nuclear Plant (NGNP) with accompanying generation of hydrogen.

Patents:

U.S. Patent No. 5,427,747 – Method and Apparatus for Producing Oxygenates from Hydrocarbons

U.S. Patent No. 5,459,767 – Method for Testing the Strength of Structural Integrity of Nuclear Fuel Particle

U.S. Patent No. 5,464,583 – Method for Manufacturing Whisker Preforms and Composites

U.S. Patent No. 5,496,655 – Catalytic Bipolar Interconnection Plate for Use in a Fuel Cell System

U.S. Patent No. 5,641,585 – Miniature Ceramic Fuel Cell

U.S. Patent No. 5,786,611 – Radiation Shielding Composition

U.S. Patent No. 6,120,706 – Process for Producing an Aggregate Suitable for Inclusion into a Radiation Shielding Product

U.S. Patent No. 6,166,390 – Radiation Shielding Composition

Licensing information

For information on licensing INL technologies such as those developed by Dr. Lessing, contact the Lead Account Executive for Non-nuclear Energy:

David Anderson

Phone: 208.526.0837

E-mail: david.anderson@inl.gov